



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,695	06/29/2001	Andrew L. Smith	5600	4961

7590 09/08/2003

Dorsey & Whitney LLP  
Suite 300 South  
1001 Pennsylvania Avenue, N.W.  
Washington, DC 20004

EXAMINER

NGHIEM, MICHAEL P

ART UNIT PAPER NUMBER

2863

DATE MAILED: 09/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/893,695

Applicant(s)

SMITH, ANDREW L.

Examiner

Michael P Nghiem

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 21-24 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6, 7, 12 and 20 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5, 8-11, 13-19 and 25-27 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

The amendment filed on June 24, 2003 has been acknowledged.

### *Specification*

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claim 2, the limitation of the frequency generator circuit generating **three** frequencies (first, second, and third) "... the frequency generator circuit comprises: a frequency generator producing **the first frequency signal and a third frequency signal**; and a multiplier circuit, ... producing **the second frequency signal**" is not described in the specification. Fig. 3 shows frequency generator (U3, U4) receiving frequency (F1) and generating two frequencies (F2, F3).

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent

Art Unit: 2863

granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 5, 8-11, 13-19, and 25-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Guenther et al. (US 6,097,755).

Guenther et al. discloses all the claimed features of the invention including:

- a circuit and method (Figs. 3, 9) for determining an indication of a length of a conductor (column 1, lines 41-44), comprising:
  - a terminal (24) for connection to a conductor under test (Fig. 3);
  - a pulse source circuit (50) coupled to the terminal for providing a signal to the conductor for use in determining an indication of the length of the conductor (column 5, lines 23-26);
  - a frequency generator circuit (Fig. 9), coupled to the pulse source circuit, for producing first and third frequency signals (signals from PW1, PW2) having a particular relationship (Fig. 9);
  - a mixer (54), coupled to the frequency generator circuit and the pulse source circuit, for receiving signals related to the first and second frequency signals (Fig. 9) and for mixing the received signals to produce an output signal (output from 54, Fig. 9);
  - a frequency generator (80, 82) producing the first frequency signal (PW2) and the third frequency signal (PW1);

- a multiplier circuit (88), coupled to the frequency generator, for receiving the third frequency signal (PW1) and producing the second frequency signal (output signal of 88), wherein the second frequency signal is a multiple of the first frequency signal (frequency ratio between signals);

- the mixer comprises a sample-hold latch (28);
- a capacitor (60) coupled between the terminal and the pulse source circuit;
- steering logic (data is digitized via 32) coupled between the terminal and the pulse source circuit;
- a re-synchronizer (80) coupled to the sample-hold latch;
- a voltage comparator (34) coupled to the pulse source and the terminal;
- an amplifier (54) coupled between the pulse source and the terminal.
- a first clock (PW1) coupled to the sample-hold latch; and a second clock (PW2) coupled to the pulse source;
- a squaring flip-flop (82) coupled between the second clock and the pulse source;
- generating first and second frequency signals having a particular relationship (PW1, PW2, TGR);
- mixing signals related to the first and second frequency signals to produce an output signal (via 80, 82, 54);
- applying a pulse, based upon the output signal, to a terminal for connection to a conductor under test (Fig. 6);

Art Unit: 2863

- receiving a signal from the terminal and performing a voltage comparison of the received signal (34 receives voltage signal from 32);
- the mixing step includes using a flip-flop (80, 82) to mix the signals;
- the first frequency signal (PW2) has a different frequency (pulse width 2, column 8, line 34) than the second frequency signal (output of pulse width 1, column 8, line 35);
- the first frequency signal and the second frequency signal have independent and varying phases with respect to each other (due to different pulse widths);
- the conductor completes the pulse source circuit when connected to the terminal (Fig. 3).

### ***Allowable Subject Matter***

3. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 6, 7, 12, and 20 are allowed

### ***Reasons for Allowance***

5. The combination or method as claimed wherein a phase-locked loop coupled to the frequency generator and a divide by N circuit coupled to the

Art Unit: 2863

phase-locked loop (claim 3) or a circuit for producing a signal having a fifty percent duty cycle of a received signal (claim 6) or a length error detector circuit coupled to the pulse source circuit and the mixer (claims 7, 12, 20) is not disclosed, suggested, or made obvious by the prior art of record.

### ***Response to Arguments***

6. Applicant's arguments filed on June 24, 2003 have been fully considered but they are not persuasive.

With respect to the 35 USC 102 rejections, Applicants argue that amplifier (54) of Guenther is not a mixer. Amplifier (54) receives a current signal, not signals.

Examiner position is that the amplifier (54) receives two signals from (88) and (90) (column 8, lines 58-61, Fig. 9). Output of (54) contains two mixed signals (output of 54, Fig. 6).

Applicants further argue that the flip-flop (80) of Guenther is not a re-synchronizer and is rather used to switch the circuit (88) on and off.

Examiner's position is that the function of the re-synchronizer is not recited in the claim. Rather, re-synchronizer is only recited to be coupled to a sample-hold latch. Figs. 3 and 9 of Guenther show re-synchronizer (80) coupled to a sample-hold latch (28) (80 and 28 are coupled together by the circuitry of Figs. 3 and 9) to "re-synchronize" the output (column 9, lines 2-3).

Applicants further argue that Guenther does not disclose that the processor (34) is coupled to the terminal.

Examiner's position is that Guenther discloses that the voltage comparator (34) is coupled to the terminal (24) via the circuitry of Fig. 3.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yau et al. (US 6,418,162) discloses a frequency spectrum measuring device (Fig. 2).

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.



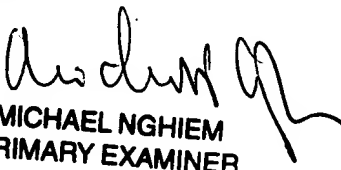
Art Unit: 2863

***Contact Information***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Nghiem whose telephone number is (703) 306-3445. The examiner can normally be reached on M-H from 6:30AM – 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached at (703) 308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

  
**MICHAEL NGHIEM**  
**PRIMARY EXAMINER**

Michael Nghiem

August 29, 2003